

8053-GDM

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE*#16*

Serial No.: 08/479,077

Art Unit: 1209

Filed: July 6, 1995

Examiner: Lamkin

By: Garcia et al.

For: SQUARYLIUM COMPOUNDS, AND PROCESSES AND
INTERMEDIATES FOR THE SYNTHESIS OF THESE COMPOUNDSCambridge, Massachusetts 02139
March 6, 2002**SUPPLEMENTAL APPENDIX TO APPEAL BRIEF**Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

On October 29, 2001 the Patent and Trademark Office Board of Patent Appeals and Interferences issued an Order Remanding to Examiner in the above-identified appeal.

The Examiner, Ms. Lamkin, informed appellants' undersigned attorney in a telephone interview held on March 5, 2002 that the amendment filed October 27, 1997 (Paper No. 12) has been entered and considered without any change in the status of the claims on appeal.

Ms. Lamkin further stated that, in accordance with the Board's requirements, appellants must submit a Supplemental Appendix which reflects the amendments made in the claims. Accordingly, appellants submit herewith such a Supplemental Appendix.

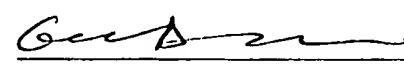
Respectfully submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being facsimile transmitted to Examiner Lamkin via facsimile no. 703-308-7922 on the date shown below.

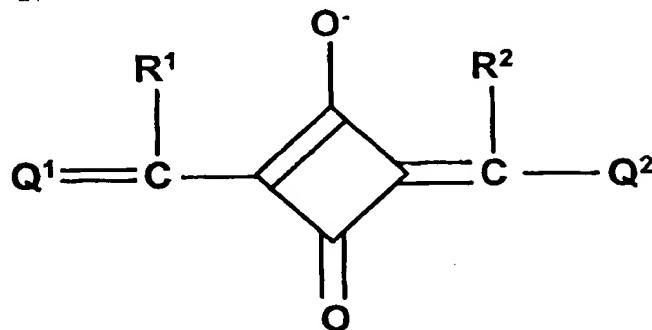
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Supplemental Appendix

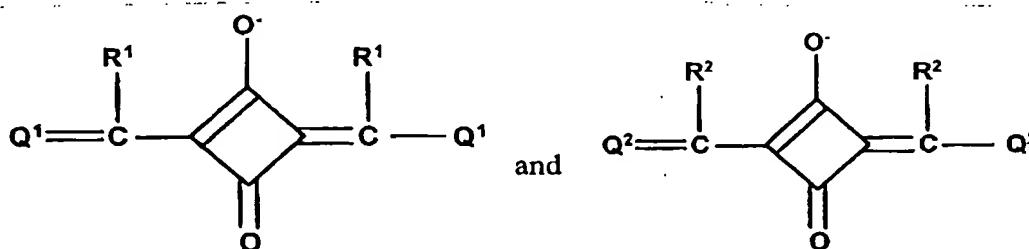
Claims on Appeal

- 1 15. A squarylium compound of the formula:



2
3 wherein Q¹ and Q² are each independently a pyrylium, thiopyrylium, selenopyrylium,
4 benzpyrylium, benzthiopyrylium or benzselenopyrylium nucleus, and R¹ and R² are
5 each independently a hydrogen atom or an aliphatic or cycloaliphatic group, the
6 Q¹CR¹ grouping being different from the Q²CR² grouping.

- 1 16. A squarylium compound according to claim 15 which is
2 essentially free from squarylium compounds of the formulae:



- 1
2 17. A squarylium compound according to claim 16 wherein each of
3 Q¹ and Q² is a 4-pyrylium, 4-thiopyrylium, 4-selenopyrylium, 4-benzpyrylium,
4 4-benzthiopyrylium or 4-benzselenopyrylium nucleus.

- 1 18. A squarylium compound according to claim 17 wherein at least
2 one of Q¹ and Q² is a 2,6-dialkylpyrylium, -thiopyrylium or -selenopyrylium nucleus,
3 in which each of the alkyl groups contains not more than about 8 carbon atoms.

1 19. A squarylium compound according to claim 18 wherein at least
23 one of Q¹ and Q² is a 2,6-di-tertiary butylpyrylium, -thiopyrylium or -selenopyrylium
3 nucleus.

1 20. A squarylium compound according to claim 17 wherein one of
2 Q¹ and Q² is a 2-phenyl benzpyrylium, benzthiopyrylium or benzselenopyrylium
3 nucleus and the other is (a) a 2-substituted benzpyrylium, benzthiopyrylium or
4 benzselenopyrylium nucleus, in which the 2-substituent is an alkyl, alkenyl, alkynyl or
5 alkicyclic group, or (b) a 2,6-dialkyl-pyrylium, -thiopyrylium or -selenopyrylium
6 nucleus.

21. A squarylium compound according to claim 20 wherein the 2-phenyl group has
an *ortho* alkoxy or cycloalkoxy substituent.

1 22. A squarylium compound according to claim 17 wherein one of
2 Q¹ and Q² is a benzpyrylium, benzthiopyrylium or benzselenopyrylium nucleus
3 bearing at its 7-position an -N[(CH₂)₃-]₂ grouping in which the ends of the
4 trimethylene groups remote from the nitrogen atom are joined to the 6- and
5 8-positions of the nucleus, so that the -N[-(CH₂)₃-]₂ grouping and the phenyl ring of
6 the nucleus together form a julolidine ring system, and the other is (a) a 2-substituted
7 benzpyrylium, benzthiopyrylium or benzselenopyrylium nucleus, in which the 2-
8 substituent is an alkyl, alkenyl, alkynyl or alicyclic group, or (b) a 2,6-dialkyl-
9 pyrylium, -thiopyrylium or -selenopyrylium nucleus.

1 23. A squarylium compound according to claim 17 wherein at least
2 one of Q¹ and Q² is a benzpyrylium, benzthiopyrylium or benzselenopyrylium nucleus
3 bearing at its 6-position an alkoxy or cycloalkoxy group.

1 24. A squarylium compound according to claim 15 in which:
2 (a) Q¹ is a 2,6-bis(1,1-dimethylethyl)-4-pyrylidene grouping, Q² is a
3 2,6-bis(1,1-dimethylethyl)-4-thiopyrylium grouping, and R¹ and R² are each a hydrogen
4 atom, namely [4-[[3-2,6-bis(1,1-dimethylethyl)-(4H-pyran-4-ylidene)-
5 methyl]-2-hydroxy-4-oxo-2-cyclobuten- 1 -ylidene]methyl]-2,6-bis(1,1-dimethyl-
6 ethyl)thiopyrylium hydroxide inner salt;

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(b) Q¹ is a 2,6-bis(1,1-dimethylethyl)-4-pyrylidene grouping, Q2 is a 2,6-bis(1,1-dimethylethyl)-4-selenopyrylium grouping, and R¹ and R² are each a hydrogen atom, namely [4-[[3-2,6-bis(1,1-dimethylethyl)-(4H-pyran-4-ylidene)methyl]-2-hydroxy-4-oxo-2-cyclobuten-1-ylidene]methyl]-2,6-bis(1,1-dimethylethyl)-selenopyrylium hydroxide inner salt;

(c) Q¹ is a 7-diethylamino-2-(1,1-dimethylethyl)benz[b]-4H-pyran-4-ylidene grouping, Q² is a 7-diethylamino-2-phenylbenzpyrylium grouping, and R¹ and R² are each a hydrogen atom, namely 4-[3-[[7-diethylamino-2-(1,1-dimethyl-ethyl)benz[b]-4H-pyran-4-ylidene]methyl]-2-hydroxy-4-oxo-2-cyclobuten-1-ylidene]methyl]7-diethylamino-2-phenylbenzpyrylium hydroxide inner salt dye;

18 (d) Q¹ is a 2,6-bis[1,1-dimethylethyl]-4-selenopyrylidene grouping, Q²
19 is a 2-[2-trifluoromethylphenyl]benz[b]pyrylium grouping, and R¹and R² are each a
20 hydrogen atom, namely 4-[[3-[2,6-bis[1,1-dimethylethyl]-[4H-selenopyran-
21 4-ylidene]methyl]-2-hydroxy-4-oxo-2-cyclobuten-1 -ylidene]methyl]-2-[2-
22 trifluoromethylphenyl]benz[b]pyrylium hydroxide inner salt dye;

23 (e) Q¹ is a 6-[but-2-oxy]-2-[1,1-dimethylethyl]benz[b]-4H-pyran-4-
24 ylidene grouping, Q² is a 6-[2-ethylbut-1-oxy]-2-phenylbenzpyrylium grouping, and R¹
25 and R² are each a hydrogen atom, namely 4-[[3-[[6-[but-2-oxy]-2-[1,1-
26 dimethylethyl]benz[b]-4H-pyran-4-ylidene] methyl]-2-hydroxy-4-oxo-2-cyclobuten-
27 1-ylidene]methyl]-6-[2-ethylbut-1-oxy]-2-phenylbenzpyrylium hydroxide inner salt
28 dye; and

(f) Q¹ is a 2,6-bis[1,1-dimethylethyl]-4-thiopyrylidene grouping, Q² is a 2,6-bis[2,4-dimethylphenyl]pyrylium grouping, and R¹ and R² are each a hydrogen atom, namely 4-[[3-[2,6-bis[1,1-dimethylethyl]-[4H-thiopyran-4-ylidene]-methyl]-2-hydroxy-4-oxo-2-cyclobuten-1-ylidene]methyl]-2,6-bis[2,4-dimethylphenyl]pyrylium hydroxide inner salt dye.